

Space Weather Forecast

Issued on Friday, 18 February 2022 at 01:02 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Minor geomagnetic storm likely late day 3.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over the past 24 hours, with a few minor Common class flares, some of which appear to have originated from previous region 2941, which transited to the far side on the 16th when it was still large and magnetically complex. However, the most recent long duration Common class flare has originated from AR2950, which is only a small and magnetically simple region. There are also five other numbered regions on the visible disc, most of which are also very small and magnetically simple. The largest and most complex region on the visible disc is currently AR2948, but this appears stable and has not generated any flares.

Solar Wind / Geomagnetic Activity: The solar wind speed has been Slow. The total magnetic field has been weak throughout, as has the important north-south component. Geomagnetic activity was Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The high energy proton flux was at background levels.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to remain Low through the forecast period, with Common class flares likely (60%) and a slight chance (5%) of a Moderate class flare. Later in the period a new region may rotate onto the visible disc, and potentially increase the probabilities of significant flares.

Solar Wind / Geomagnetic Activity: No CMEs feature in this forecast period. Solar winds are likely to remain slow until later on day 3 (20th), then becoming elevated due to the anticipated arrival of an enhancement from a coronal hole. If this was to happen Quiet geomagnetic activity would become Unsettled to Active, with isolated Geomagnetic storm intervals likely during day 3 (20th).

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	1	60	40
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	5	5	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)